United States Comments on MPT Study Group LRIC Model for Interconnection

The United States appreciates the opportunity to comment on the MPT's proposed LRIC model for interconnection. Below are both general and specific comments on this model.

I. General Comments

1. Implemented correctly, applying LRIC to interconnection can be one of the single most important factors in promoting a competitive telecommunications market in Japan, by sending the correct long-term signals for market entry, investment, and innovation. LRIC is widely recognized as the most appropriate methodology for ensuring market-based pricing of interconnection and access to essential network elements that competitors need.

2. The focus on LRIC in bilateral discussions culminating in the June 1998 Joint Status Report of the Enhanced initiative on Deregulation and Competition Policy, reflects the importance the United States attaches to this issue.

3. At the same time, if LRIC is implemented inadequately, it will be one of the Japanese telecommunications market's biggest missed opportunities. MPT's approach to LRIC is a test case of whether the MPT will lead Japan to embrace competition, or continue the recent record of minimalistic regulatory change, with has had the effect of providing continued protection to incumbents against the forces of competition---protection which has deprived Japanese consumers of the price reductions, innovative technology, and new service offerings, and which has deprived the Japanese economy of investment, job creation, economic growth and efficiency gains.

4. Because of the impact a LRIC can have on a telecommunications market, it is clear that MPT will face significant pressure from the incumbent providers (NTT Holding Company, NTT East and NTT West) to diminish the pro-competitive effect LRIC by manipulating the methodology in a manner favorable to its interests. If the MPT is to demonstrate that it can effectively promote competition, it must clearly resist such pressure, and keep focused on the ultimate goal of a fair, market-based approach to setting interconnection rates--forcing NTT to operate more efficiently, rather than subsidizing its inefficiencies through charges imposed on consumers and competitors.

5. While the MPT LRIC model identifies the correct goals of the LRIC methodology and has developed a model of considerable sophistication, it is doubtful whether it achieves the goals it has set out, due a range of flaws identified below.

6. The output of the model raises the fundamental questions that should be answered before such a model is implemented. Interconnection rates of 1.95 yen per minute for ZC interconnection, and 1.82 yen per minute for GC interconnection, which the model predicts, remain up to 8 times interconnection rates available in the United States (e.g. Bell Atlantic Pennsylvania, prices end-office interconnection, based on LRIC at 0.2 cents a minute, or 0.24 yen per minute, where $1= 120 yen). It is simply inconceivable that costs in Japan are this much higher than in the United States. Thus, the inputs, assumptions and structure of the model most must be rectified

before this model is implemented if it is to provide a credible basis for determining interconnection costs. While the unrealistically short comment period and restriction on public discussion of certain data preclude a thorough analysis, some suggestions for improving the accuracy of the model are noted below.

II. Comment Process

7. Given the complexity of LRIC models, affording interested parties only three weeks to comment on the interim results is unacceptable. If the MPT expects serious input from carriers, some the most deeply affected of which are foreign and which face additional burdens of translation, MPT must provide a more realistic comment timetable. Failure to do so lends the appearance that MPT seeks to minimize the ability of interested parties to engage in meaningful analysis and comment, undermining the credibility of the entire exercise.

8. It is extremely regrettable that MPT, presumably under pressure from NTT, decided only days before publication of the model to require confidential treatment of certain model inputs. Such a practice undermines the ability of a broad range of participants to access the input data and openly comment on it-depriving the MPT of an important source of analysis. If the MPT is serious about presenting a credible model, it will immediately open to public inspection relevant data that constitute MPT's proposed inputs into the model.

9. While U.S. carriers occasionally request confidential treatment for data they submit, the inputs the FCC ultimately chooses are subject to public scrutiny. It is noteworthy that several state regulators (New Mexico, Virginia) have rejected models developed by carriers precisely because the inputs were kept confidential.

III. Assumptions of the model - "greenfield" vs use of existing wire centers

10. Most LRIC models employed in the U.S. use a "scorched node" approach, assuming the existing wire-center locations. This approach is based on the assumption that existing wire center configurations represent a relatively efficient network structure, which can be adjusted through the use of new technology (i.e. use of remote terminals versus host switches where appropriate). MPT should ensure that assuming existing wire centers does not require each wire center to be equipped with a full-fledged switch. In U.S. networks, it is not uncommon for carriers to use local switches with capacity up to 100,000 lines. NTT's network configuration, however, may have been determined by the characteristics of the switches it employs, which, reportedly, are of much lesser capacity--despite the fact that Japan's high population density would permit an operator to achieve great economies of scale through the use of higher-capacity switches. Thus, it is possible that NTT's choice of switch has required it to deploy many more switches than that of an efficient operator, and MPT should consider whether alternate configurations would be more efficient.

IV Assumptions of the Model - Assigning Remote Terminals as traffic-sensitive

costs

11. One of the major apparent problems of the MPT model is its assigning remote terminal costs as a traffic-sensitive cost, thus significantly increasing the per-minute termination charges.

12. It is generally accepted that remote terminal costs are non-traffic sensitive. While it might be possible that some remote terminal costs could be traffic-sensitive, such costs would approach zero with new technology. In short, an increase in traffic to or from end-users does not require additional investment in remote terminal facilities. MPT is strongly advised to eliminate remote terminal costs as traffic-sensitive costs associated with interconnection, to ensure the model credibly represents incremental costs.

V. Assumptions of the Model - Assigning all switch costs to be traffic sensitive

13. The incremental cost of supporting increased level of minutes of for most parts of a network are extremely low and traditional pricing approaches do not reflect this. This is true, as well, for most functions of a switch. For example, line cards and vertical features of a switch are both non-traffic sensitive. It appears, however, that the MPT model treats all switch costs as traffic sensitive. This is clearly incorrect, and the cost of elements such as line cards and vertical call-processing features of the switch (call-waiting, call forwarding, voice-mail, etc) are non-traffic sensitive and should be subtracted when considering the cos of interconnection. In the U.S., the FCC estimates that about 70% of the cost of a switch should be attributed to non-traffic sensitive costs.

VI. Assumption of the model - deployment of lines underground versus aerially

14. MPT should examine whether the assumptions on the ratio of lines buried versus deployed aerially reflects the practices of an efficient operator. NTT's historical choices of whether to bury lines rather than place lines on poles was likely influenced by its inefficient investment practices deriving from rate-of-return regulation, and may have reflected public works priorities that were not economically justifiable. In addition, the MPT model does not appear to provide for trenching cable--an efficient technique that is significantly cheaper than building tunnels.

VII. Depreciation Rates

15. MPT is to be commended for attempting to use the economic lives of equipment in its model as opposed to tax lives of equipment, which bear no relationship to economic costs. The extremely short nature of tax live of equipment in Japan (which are used for current interconnection rates) appears to be a key factor in driving current interconnection rates substantially above cost. Nevertheless, despite the improvement evident in the MPT's LRIC model, many of the equipment lives in the model appear to continue to underestimate the useful economic lives of equipment. Since new competitors have not been in the market long enough to provide alternative information, MPT appears to have adopted NTT's estimates of service lives.

16. It is possible, of course, that NTT equipment has a shorter service life than equipment used by operators in other markets. Even if that is the case, however, such lives should not be the benchmark for an efficient carrier. There are a number of reasons that might explain any shorter service life NTT may claim.

17. First, it is possible that equipment NTT uses simply does not last as long as equipment in competitive markets. NTT's reluctance to use open market procurement and preference to co-develop equipment with its "family suppliers" may have resulted in the deployment of sub-standard equipment that needs to be replaced more often than equipment in other markets. This, however, would clearly not reflect the practice of an efficient operator, which would, by contrast, base its decisions on world market availability. The fact that NTT co-developed equipment is rarely marketed outside Japan would appear to substantiate the view that it is not the lowest cost or most efficient equipment.

18. NTT's arguments that rapid technological change mandates shorter equipment lives than those practiced in the past is belied by the fact that other markets, which regulate rates based on longer service lives, succeed in developing networks of far greater capacity and sophistication than that developed by NTT.

19. Furthermore, it is clear that NTT, having been regulated on a rate-of-return basis, has had an incentive to replace its equipment more often than necessary to maintain and expand its rate base--a fact exacerbated by the accelerated depreciation permitted under Japanese tax law. It is also likely that NTT engages in a significant amount of procurement as a form of "public works"-responding to local political pressure. The public opposition by NEC (a major “family company”) to a break-up of NTT in 1995 demonstrated the entrenched interests which participate in NTT's procurement activities, and the impact of non-economic factors in NTT's procurement policies.

20. For all these reasons, NTT is unable to provide credible data on the economic lives of equipment, and in the absence of objective studies, the MPT should look to data available in other markets if non-NTT data in unavailable in Japan. Some of the key rates the FCC has recently proposed PT should consider using in its model include:

Equipment	FCC Life	MPT Model life
Digital Switches	16.17 years	11.9 years
Copper cable	21.61-25.0 years	13 years
Fiber optic cable	25.91-26.45 years	11.2 years
Underground Conduit	56 years	27 years
Buildings	46.9	

VIII. Structure of the MPT Model - Ability to optimize network configuration

I t appears that the MPT model is based on spreadsheets and look-up tables and does not provide for network optimization. If correct, this is a significant weakness in the MPT model which should be corrected.

IX. Value of NTT's Proposed Top-down Model

21. While NTT is reportedly developing its own "top down" model, it is unclear how such a model would contribute to assessing market-based costs for interconnection. As we understand it, what NTT is expected to present is a model that re-prices NTT's corporate overhead costs using current or replacement cost. This, we believe, is fundamentally flawed. No carrier, if it were to build a network today would replicate exactly an existing network. Rather, the carrier would design the least cost and most efficient network possible, given current available technology. (See . e.g. Alfred E. Kahn, the Economics of Regulation: Principles and Institutions, pp112-113.) Because of this, any top down model will over-estimate forward-looking economic cost. Moreover, given the history of rate of return regulation, a model based on NTT's existing network also is likely to include all of the excessive investment and inefficiencies is engendered by such regulation (the Averich-Johnson effect).

22. Since NTT did not invite interested parties to participate in its development of an alternate model, it is unlikely that such a model could be credibly analysed and discussed. Based on NTT's apparent efforts to keep data in the MPT model confidential, it is likely that NTT will demonstrate a similar lack of transparency regarding its own model.

23. Any model which NTT develops based on NTT's current switch deployment (D-60 and D-70 switches) would vastly overstate the cost of a forward-looking network. Nikkei Communications reports that the per-line cost of a D-70 switch is 20,000 yen, a figure that skyrockets to an astonishing 100,000 yen per line when ISDN functionality is added. (source: Nikkei Communications, August 4, 1997). This contrasts to incremental per-line costs of $84 in the U.S., (about 10,000 yen) based on survey data, a figure used in U.S. LRIC models. (It is generally recognized that ISDN functionality, based on the current pricing, only adds marginally to per line cost of a switch. Since NTT developed its ISDN functionality itself, however, this is another cost that bears little relation to market-based costs in the NTT network.)

24. The difficulty of determining forward-looking costs using NTT data is compounded by the fact that NTT writes its own software for its switches. Clearly, using 10,000 NTT employees (the head count of NTT's software subsidiary, Commware) to write software for switches used exclusively in NTT's network is unlikely to be a cost-effective, and is a major factor contributing to the excessive costs of NTT's current network. NTT and its family suppliers are estimated to have spent over 600 billion yen (over $5 billion) over the past decade developing an ATM switch, which has yet to see broad-based use. (Source: industry estimate). Embedding such costs in any model would clearly violate the assumptions of using an efficient operator as the benchmark for costs.

25. The inefficiency of the NTT network, which is reflected in any costing methodology using historical costs is demonstrated by an analysis of investment data. Based on NTT's annual reports, NTT spends over 2 trillion yen (about $20 billion) per year on investment in property, plant, and equipment. By contrast, Bell Atlantic (which serves over 40 million lines, versus NTT's 60 million), spends about one-third that amount ($6-7 billion source: Bell Atlantic annual reports). Nevertheless, it is likely that Bell Atlantic's network carries significantly more traffic than NTT's: the average U.S. carrier carries over 10,000 minutes per access line per year, versus NTT, which carries about 4,000 minutes per access line. (Source: MPT news, Vol. 9, No. 21; FCC Trends Report). Thus, while NTT spends significantly more per access line in terms of capital investment, the result of such investment is a network of significantly less capacity than that of a more efficient operator, and any model based on such historical accounts would not reflect the costs of an efficient operator.

26. Other factors that would have to be analyzed to ensure that NTT was not embedding illegitimate costs in a top-down model would be costs associated with NTT employee compensation (e.g. access to NTT's exclusive medical facilities, housing facilities, vacation facilities, etc), costs associated with NTT business development (e.g. entertainment expenses), and NTT's public policy expenses (e.g. political contributions). Unless NTT can credibly demonstrate that such costs are not included in costs levied on interconnection and network elements, any such cost model will be will be suspect. For all these reasons, the MPT should reject NTT's proposed "top-down" model as a basis for establishing LRIC for interconnection, and should focus, rather, on improving the model it has developed itself.